in my opinion

Reaping the Technology

Don't automate the old rules; break them!

SINCE THE EARLY 1990'S, BUSINESSES HAVE invested large sums of money (somewhere between two and five trillion dollars) in buying and implementing enterprise software, not to speak of the substantial time and energies that have gone into such implementations. While some investments such as design automation software have paid off as expected, most have not. Prime examples are ERP, CRM and SCM.

How does one explain this apparent paradox? The power of enterprise software is in moving, processing and storing large amounts of data quickly and efficiently. Once you recognize that this power has been used to automate either repetitive work or automate management information, the answer becomes clear. For when you automate repetitive work, you benefit. Work can be done cheaper, faster and with fewer errors.

But, when software has been used to automate management information, all attempts to-date have failed because:

The potential benefit of computers to managers is enterprise-wide visibility, so that they can make decisions based on what is good for the organization rather than what is good for their department. Let's be clear here. We are talking about simple day-to-day decisions, not necessarily strategic decisions. For example, should an engineer work on Project A or Project B? If the department manager knows that Project A cannot be accommodated by the downstream testing department for another two weeks, he can instruct the engineer to work on Project B.

Unfortunately, existing management rules compensate for lack of global visibility by optimizing locally. Managers hope that if everyone is locally efficient, the organization as a whole will also be efficient in the long run. As we know from our intuition, this is not true. For example, Sales can be very efficient by selling more of Product A so salespeople book many large orders for it. But Manufacturing is most efficient in producing Product B. If both Sales and Manufacturing continue to improve their local efficiencies, the company simply ends up with too much inventory and too many unhappy customers. Worse yet, the situation will never improve—even when you provide visibility of Sales to Manufacturing. You have to change the rules!

Therefore, when you implement ERP, you can reduce the number of people needed in Purchasing and Accounts, but your inventory levels, lead times and production efficiencies remain exactly the same. Remember how CISCO would close its books in 24 hours because of its real-time systems, yet, at the same time, write-off billions in inventory? The issue was not visibility. After all, CISCO wrote off many months of inventory – even faxes and telephones can transmit information faster than that. Such write-offs highlight the local optimization rules that exist in their supply chain.

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The News Isn't All Bleak

The good news is that there are generic management rules that companies can apply to reap

Sanjeev Gupta
CEO, Realization Technologies

technology dividends. These rules are geared towards exploiting enterprise-wide information available through software to maximize ***flow***. Wide ranges of large organizations are using these rules to increase the flow of their goods, projects and services. They have raised their organization's output by 10, 20, 30 and 40 percent rather than miniscule 1, 2, 3 and 4 percent that the rest of the players in their industry are getting.

The rules of flow, while common sense, are counter to common practice. Very simply, they are stated as:

Don't start work ASAP. Control the release of work into execution—whether you are involved in projects or in manufacturing products—based on the availability of the most heavily loaded operations. Releasing work any sooner will increase in-process inventory because jobs will only get stuck at those operations.

Use global buffers instead of local safeties. Managers have to protect against the inevitable uncertainties of execution. But the rules by which they seek protection must change. Consider for example a product that requires manufacturing, assembly and testing. Instead of planning one week of a lead time for manufacturing, one for assembly and one for testing—when it really takes only 2 hours to perform any of those steps—plan manufacturing, assembly and testing for 2 hours each and add a buffer of one week at the end. This global buffer will absorb any glitches that might happen in any of the areas, and your product will finish in one-third the time.

Drive execution based on buffer impact. Assign resources to those jobs first that have lowest buffer remaining ahead of them. If buffers are running low for too many jobs, take extraordinary actions like working weekends. Maximizing flow also means being more responsive to customers (lead times are dramatically shorter) and avoiding large investments in capacity (more can be done with less). Most importantly, when an organization adopts flow, chances that its competitors will catch up are remote at best. Those competitors are probably setting up committees to benchmark performance in their industry, and will end up automating a *pot pourri* of "best practices", while the visionaries change the rules of the game.

Sanjeev Gupta is CEO of Realization Technologies (www.realization.com), an enterprise software company that specializes in flow of projects. The concept of flow is derived from Dr. Eli Goldratt's Theory of Constraints, and this article borrows liberally from his many writings. If you have any comments or feedback, please write to Sanjeev Gupta at breakoldrules@realization.com.